



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/031,977	09/09/2002	Rudiger Franke	LSP-0016	1082

7590 09/29/2003

David P Owen
Howrey Simon Arnold & White
Citypoint
One Ropemaker Street
London, EC2Y 9HS
UNITED KINGDOM

EXAMINER

TRAN, DALENA

ART UNIT

PAPER NUMBER

3661

DATE MAILED: 09/29/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/031,977

Applicant(s)

FRANKE ET AL.

Examiner

Dalena Tran

Art Unit

3661

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 September 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 6-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 6-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 8.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Notice to Applicant(s)

1. This application has been examined. Claims 6-21 are pending.
2. The prior art submitted on 1/9/03 has been considered.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

4. Claims 14-21, are rejected under 35 U.S.C.102(b) as being anticipated by Ibaraki et al. (5,789,882).

As per claim 14, Ibaraki et al. disclose a method for power optimization for a vehicle traveling over a route according to a schedule which includes a time reserve, the vehicle comprising a plurality of completely or partially autonomous drive system, method comprising identifying at least two completely or partially autonomous drive system in the vehicle (see column 3, line 15 to column 4, line 22), determining power loss of each identified autonomous drive system (see the abstract), and determining a power saving travel mode for the vehicle using an optimization algorithm in which the power loss of the identified autonomous drive system is taken into consideration (see column 14, line 46 to column 16, line 40).

Art Unit: 3661

As per claim 15, Ibaraki et al. disclose the autonomous drive system comprise one or more drive systems from the group consisting of bogies with a separate drive and driven axles (see column 11, line 54 to column 12, line 64).

As per claim 16, Ibaraki et al. disclose power loss for each identified autonomous drive system is determined as a function of tractive force and vehicle speed (see column 11 lines 5-53).

As per claim 17, Ibaraki et al. disclose combining the function of power loss of each identified autonomous drive system to form an overall function of power loss for the vehicle for use in the optimization algorithm (see column 16, line 41 to column 17, line 64).

As per claim 18, Ibaraki et al. disclose combining the function of power loss of each identified autonomous drive system to form a representative function of power loss for the vehicle (see column 17, line 65 to column 19, line 17), determining the number of autonomous drive system in the vehicle (see column 19, line 18 to column 21, line 20), and determining power loss on the basis of the representative function of power loss and the number of autonomous drive system in the optimization algorithm (see column 22, line 1 to column 23, line 33).

As per claim 19, Ibaraki et al. disclose determining an on / off state for each autonomous drive system and wherein the power loss of the identified autonomous drive systems and their respective on / off states is taken into consideration in the optimization algorithm to determine a power saving mode (see column 6, line 23 to column 7, line 55).

As per claim 20, Ibaraki et al. disclose autonomous drive systems are identified by taking boundary conditions into account, the boundary conditions consisting of one or more conditions taken from the group comprising expected tractive force, expected braking force, adhesion

Art Unit: 3661

coefficients, temperature, and influence in the drive dynamics (see column 8, line 37 to column 9, line 59).

As per claim 21, Ibaraki et al. disclose determining an optimum combination of the autonomous drive systems for use while traveling over the route (see column 9, line 60 to column 10, line 26).

5. Claims 6-10, and 13, are rejected under 35 U.S.C.102(b) as being anticipated by Pels (6,167,339).

As per claim 6, Pels discloses a method for power optimization for a vehicle traveling over a route according to a schedule which includes a time reserve, the vehicle comprising a plurality of completely or partially autonomous drive system, method comprising: identifying at least two completely or partially autonomous drive system in the vehicle, and determining efficiency of each identified autonomous drive system (see column 2, line 19 to column 3, line 6), and determining a power saving travel mode for the vehicle using an optimization algorithm in which the efficiency of the identified autonomous drive system is taken into consideration (see column 3, lines 6-54).

As per claim 7, Pels discloses the autonomous drive system comprise one or more drive systems from the group consisting of bogies with a separate drive and driven axles (see column 4, lines 3-37).

As per claims 8-9, Pels discloses efficiency for each identified autonomous drive system is determined as a function of tractive force and vehicle speed, and combining the functions of efficiency of each identified autonomous drive system to form an overall function of efficiency for the vehicle for use in the optimization algorithm (see column 5, lines 6-67).

Art Unit: 3661

As per claim 10, Pels discloses combining the functions of efficiency of each identified autonomous drive system to form a representative function of efficiency for the vehicle (see column 6, lines 6-55), and determining the number of autonomous drive system in the vehicle, and determining efficiency on the basis of the representative function of efficiency and the number of autonomous drive system in the optimization algorithm (see column 6, line 56 to column 7, line 37).

As per claim 13, Pels discloses determining an optimum combination of the autonomous drive system for use while traveling over the route (see column 7, line 39 to column 9, line 25).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 11-12, are rejected under 35 U.S.C.103(a) as being unpatentable over Pels (6,167,339) in view of Dreher et al. (4,866,622).

As per claim 11, Pels does not disclose on / off states. However, Dreher et al. disclose determining an on / off state for each autonomous drive system and wherein the efficiency of the identified autonomous drive systems and their respective on / off states is taken into consideration in the optimization algorithm to determine a power saving mode (see column 2, line 47 to column 4, line 9). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Pels by combining determining an on / off

Art Unit: 3661

state for each autonomous drive system to determining a power saving and power loss of the system.

Also, as per claim 12, Dreher et al. disclose autonomous drive system are identified by taking boundary conditions into account, the boundary conditions consisting of one or more conditions taken from the group comprising expected tractive force, expected braking force, adhesion coefficients, temperature, and influences in the drive dynamics (see column 1, line 35 to column 2, line 46; and column 6, line 29 to column 7, line 57).

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

. Newman (5,440,489)

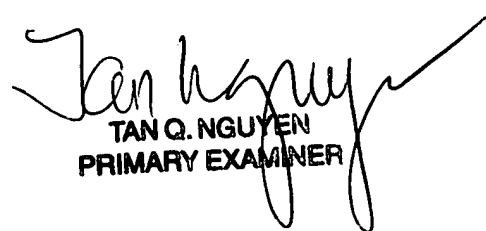
. Friedmann et al. (5,788,004)

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dalena Tran whose telephone number is 703-308-8223. The examiner can normally be reached on M-F (7:30 AM-5:30 PM), off every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Cuchlinski can be reached on 703-308-3873. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-7687 for regular communications and 703-305-7687 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1113.

/dt
September 20, 2003


TAN Q. NGUYEN
PRIMARY EXAMINER